UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: November 21, 2002

SUBJECT: Remedial Investigation/Feasibility Study Work Plan for Chemical Recovery Systems, Inc., Elyria, OH, prepared by Parsons

FROM: David Brauner, Ecologist DMB

TO: Gwen Massenburg

I have reviewed the document submitted as the proposed Baseline Ecological Risk Assessment (BERA) workplan for the abovementioned site. Many of the comments are relevant because the site characterization has not been done and those issues will presumably be mostly resolved once that stage of the investigation is completed. However, it was repeated several times that a Preliminary Risk Evaluation (PRE) was performed, but the extent of that PRE was not indicated Some of the information from that PRE was apparently not included in the development of this workplan. There are also some inaccuracies that are detailed below. As is, the work plan is unacceptable. In general, there are insufficient details and inadequate explanations for each of the steps. Every step needs to be filled out with additional details. Some more specific comments are as follows.

1) It appears as if a PRE was done, but little information and no details from that PRE was included in the development of this workplan. If a Screening Level Ecological Risk Assessment (including screening out Contaminants of Concern) was **not** performed, then it should be done, not a "Baseline" ERA as suggested in the workplan. A BERA takes place after a SLERA, if it is deemed necessary to do further investigative work at the site.

2) In general, the work plan appears to be following the Superfund Ecological Risk Assessment Guidance (USEPA 1997), but should be fleshed out.

3) Section 4.3.2.1 Site Characterization:

a) The work plan mentions completion of site characterization in a "preliminary risk evaluation." That information should have been included in this document. Selection of ecological receptors (plants and animals affected by contaminants present) is based on the site characterization.

b) Description of current and future habitat availability and land-use is acceptable here in site characterization. However, consideration and evaluation of these factors is more appropriate in the Risk Characterization portion of the ERA, not the site characterization and data evaluation sections.

4) Section 4.3.2.2 Data Evaluation:

a) This statement is too vague. Assuming that the Contaminants of Concern (COCs) will be identified using testing of various samples, some COCs may affect ecological receptors while not affected human health, and vice versa.

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5) Section 4.3.2.3 Toxicity Assessment:

a) The specific criteria that will be used to assess toxicity to wildlife should be listed and described.

b) Aquatic Life: Why are sediment samples not to be taken? Was there no contamination in the sediments? If this has not been established, then sediment sampling, screening of those results against established benchmarks, and toxicity evaluation should be done.

c) Terrestrial Wildlife: It is incorrect that "Criteria have not been developed specifically for the protection of terrestrial wildlife." In addition, it is not acceptable to use guidelines for livestock drinking water as protective of terrestrial wildlife as toxicity values protective of domesticated animals should not be used in ecological risk assessments. There are several possibilities for assessing toxicity to terrestrial wildlife: one, generic soil screening numbers (such as the Region 5 Environmental Data Quality levels and others); two, toxicity to earthworms via soil exposure; three, toxicity to small mammals and other terrestrial wildlife via soil exposure; four, food chain modelling.

d) Vegetation: What are the USEPA guidelines for phytotoxicity? There is no reference.

e) See the DOE Oak Ridge National Laboratory (ORNL) website for screening benchmarks for wildlife and plants. (http://www.esd.ornl.gov/programs/ecorisk/ecorisk.html)

6) Section 4.3.2.4 Exposure Assessment:

a) Again, if a PERA was done, where is the information on ecological receptors from that study? If it was done, information on ecological receptors at the site might be available and, if so, included here.

b) The USEPA's Wildlife Exposure Handbook provides information on intake rates for a number of species, and there are benchmarks available (e.g., ORNL), if not necessarily for the receptors present, then for surrogate species.

c) It does not seem as if there will be unusual species present at the site, and thus calculating/estimating exposure to ecological receptors should not pose a tremendous difficulty. However, considering that none of the ecological receptors that were allegedly identified in the PERA are listed here, it is impossible to determine if exposure estimates can or cannot be calculated. Sampling should be done to allow for the calculation/estimation of exposure to plants and wildlife.

7) Section 4.3.2.5 Risk Characterization:

a) Additional data should be collected to rectify "the lack of quantitative exposure and toxicity information."

b) The next statement, "Exposure concentrations of chemicals of concern in groundwater or surface waters will be compared with USEPA AWQC, as appropriate", appears to contradict what was stated in the Exposure Assessment section. The Exposure Assessment section suggests that exposure estimates were not, and will not be, done. If exposure estimates were not calculated, what numbers are being used to compare against the AWQC?

c) Soil concentrations should at least be compared to earthworms in addition to terrestrial vegetation.

d) What are the potential sources of uncertainty?

e) The document repeats that there is information available in the Preliminary (or Initial) Risk Evaluation. However, details from that study should be included here to present a better understanding of what will be futher investigated in terms of ecological receptors, toxicity, and so on.

I may be contacted at 6-1526 if you have questions or comments. Please fill out the attached evaluation form and return it to Larry Schmitt, SR-6J. The information is used to assess and improve our services.

References:

Oak Ridge National Laboratory: Ecological Risk Analysis: Tools and Applications
http://www.esd.ornl.gov/programs/ecorisk/ecorisk.html

USEPA. RCRA Environmental Data Quality Levels. http://www.epa.gov/Region5/rcraca/edql.htm

USEPA. 1993. Wildlife Exposure Factors Handbook. EPA 600-R-93-187.
http://cfpub.epa.gov/ncea/cfm/wefh.cfm?ActType=default

USEPA. 1997. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. EPA 540-R-97-006.

cc: Larry Schmitt, Section Chief, RRS #1